

ABSTRACT

The invention relates to bacterial choline binding proteins (CBPs) which bind  
5 choline. Such proteins are particularly desirable for vaccines against appropriate  
strains of Gram positive bacteria, particularly streptococcus, and more particularly  
pneumococcus. Also provided are DNA sequences encoding the bacterial choline  
binding proteins or fragment thereof, antibodies to the bacterial choline binding  
10 proteins, pharmaceutical compositions comprising the bacterial choline binding  
proteins, antibodies to the bacterial choline binding proteins suitable for use in  
passive immunization, and small molecule inhibitors of choline binding protein  
mediated adhesion. Methods for diagnosing the presence of the bacterial choline  
binding protein, or of the bacteria, are also provided. In a specific embodiment, a  
15 streptococcal choline binding protein is an enolase, which demonstrates strong  
affinity for fibronectin.